REMARKS

In the Office Action under reply, claims 65-73 were examined, with the remaining claims, i.e., claims 1-64, standing provisionally withdrawn as a result of a restriction requirement. Claims 1-64 have now been withdrawn from consideration. Claims 68 and 71 have been amended.

ELECTION

The pending claims have been subjected to restriction under 35 U.S.C. 121 as follows:

I. Claims 1-64, drawn to a method, are classified in class 264, subclass 425;

II. Claims 65-73, drawn to a method, are classified in class 430, subclass 311.

On September 29, 2003, Applicants provisionally elected to prosecute the invention of Group II, claims 65-73. Applicants hereby affirm that election, without traverse.

THE AMENDMENTS

Claim 68 has been amended to depend from claim 65 and claim 71 has been amended to depend from claim 67. Thus, the product claims now depend on the processes presently claimed. Support for these amendments can be found, for example, at page 17, paragraphs [0073]-[0074] of the specification.

REJECTION UNDER 35 U.S.C. §102(B) OVER HAWKER ET AL.

Claims 65-73 were rejected under 35 U.S.C. §102(b) as being anticipated by Hawker et al. (U.S. Patent No. 6,107,357).

The Examiner cites Hawker et al. as disclosing a method for preparing a porous dielectric material comprising polymers having a plurality of crosslinkable groups that undergo irreversible crosslinking reactions when heated; heating the crosslinkable groups to the crosslinking temperature to form crosslinked particles; mixing the crosslinked particles with the host polymer to form a mixture; and heating the mixture to a decomposition temperature of the crosslinked portion. Applicants respectfully traverse this rejection.

Hawker et al. teaches in col. 5, lines 63-67 and col. 6, lines 1-13, as noted by the

Examiner, a porous dielectric material prepared using the following process steps:

> (a) admixing, in a suitable solvent, (i) a thermally labile porogen having a reactive site that enables covalent attachment to another molecular moiety, (ii) a thermally stable, low dielectric constant host polymer having a high glass transition temperature T_g, and (iii) a coupling agent effective to covalently bind to both the reactive site of the porogen and the host polymer;
> (b) heating the admixture to a temperature T_C effective to couple the porogen to the host polymer via the coupling agent, whereby a polymeric matrix is formed in which the porogen is present as a discrete phase within a continuous phase formed by the host polymer; and
> (c) heating the polymeric matrix to a temperature T_D effective to degrade the porogen without affecting the host polymer, leaving closed cell "pores" behind.

Thus, the method in Hawker et al. involves: 1) mixing a porogen, a polymer host, and a coupling agent; 2) heating the mixture to couple the porogen to the host polymer to form a matrix; and 3) heating the matrix to degrade the porogen.

The present invention, however, teaches a method of preparing porous dielectric materials using the following steps:

> (a) providing synthetic polymer molecules having a plurality of crosslinkable groups that are inert until activated, but which when activated undergo an irreversible intramolecular crosslinking reaction;
> (b) **activating the crosslinkable groups** under crosslinking conditions, whereby irreversible intramolecular crosslinking of the polymer molecules occurs **to form crosslinked particles**;
> (c) **mixing** the crosslinked particles with a **host matrix** material to form a mixture, wherein the decomposition temperature of the crosslinked particles is less than the decomposition temperature of the host matrix material; and
> (d) heating the mixture to the decomposition temperature of the crosslinked particles, so that the crosslinked particles decompose to create a porous dielectric material.

Hawker et al. does not disclose making crosslinked particles that are mixed with a host matrix, but rather teaches forming a matrix from a mixture. Therefore, Hawker et al. does not recite all of the elements of the claimed invention.

Moreover, the present invention is further distinguished from the Hawker e al., as disclosed in the specification:

> Polymer-based dielectric materials like those noted above [referring to Hawker et al.] can often provide lower dielectric constants than inorganic

> materials. Unfortunately, it has been difficult to manufacture organic dielectric matrices having a small pore size. By using the **crosslinked particles** of the invention in **combination with organic matrix host materials**, a porous organic dielectric matrix is obtained having closed cell pores whose diameters fall substantially in the range of 2-25 nm, and more preferably within the range of 2-10 nm.

See page 16, paragraph [0071].

Applicants respectfully point out that for a reference to be §102 art, the reference must teach the **same** invention. One of skill in the art would not assert that the Hawker et al. method of mixing, heating to form a matrix, and heating the matrix to degrade the porogen is the "same" as activating a polymer to form crosslinked particles, mixing the particles with a host matrix, and heating the mixture to degrade the crosslinked particles, as is required for a proper §102 rejection.

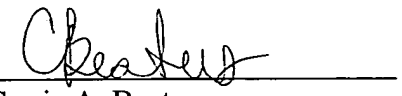
In summary, as the Examiner is aware, "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Hawker et al. discloses a very different process of making dielectric materials. **Hawker et al. fails to disclose a method of producing dielectric materials and integrated circuits by forming crosslinked particles that are then mixed with a host matrix, as presently claimed in claims 65-67. Hawker et al. also fails to disclose dielectric materials and integrated circuits produced by such methods, as presently claimed in claims 68-73.** As such, Applicants respectfully submit that claims 65-73 are not anticipated by and are patentable over Hawker et al. Therefore, Applicants respectfully submit that the rejection of claims 65-73 under 35 U.S.C. §102(b) has been overcome and request that the rejection be withdrawn.

SUMMARY

The above arguments and amendments to claims 68 and 71 are submitted for the purpose of facilitating allowance of the claims. A sincere effort has been made to place this application in condition for allowance. An early notice of allowance is earnestly requested.

If in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned at (650) 330-0900.

Respectfully submitted,

By: 

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